



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,170	08/01/2005	Tomoharu Kaneko	L9289.05164	7733

52989 7590 01/16/2007  
STEVENS, DAVIS, MILLER & MOSHER, LLP  
1615 L. STREET N.W.  
SUITE 850  
WASHINGTON, DC 20036

EXAMINER

GOETZE, SIMON A

ART UNIT PAPER NUMBER

2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/544,170	Applicant(s) KANEKO ET AL.	
	Examiner Simon A. Goetze	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### ***Election/Restrictions***

2. Applicant's election with traverse of claims 1-7 and 10-14 in the reply filed on November 17, 2006 is acknowledged. The traversal is on the ground(s) that the text of claims 8 and 9 is incorporated in claims 10 and 13. This is not found persuasive because the restriction was not written on the basis of burden upon the examiner. While the text of claims 8 and 9 is included in claims 10 and 13, claims 8 and 9 are written in independent form and diverge from the scope of the elected claims, which deal with authentication, and do not have any linking claims.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 1-7 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee et al. (US Patent Application Publication 2004/0242228)** in view of **Eaton et al. (US Patent 6,888,811)**.

Consider **claim 1**, Lee et al. discloses a centralized management authentication apparatus that performs centralized management of authentication to enable a wireless terminal apparatus to perform roaming on a plurality of wireless networks each having at least one radio base station, said centralized management authentication apparatus comprising (*Abstract; Page 2, Paragraph 0027; Page 3, Paragraph 0040; Page 4, Paragraph 0062*):

an information acquirer that acquires service area information of each of the plurality of wireless networks and information of a current location of the wireless terminal apparatus

*(server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0063 and 0066);*

an authentication information notification destination searcher that specifies at least one of the wireless networks that provides communication services in a peripheral area of the current location of the wireless terminal apparatus based on the acquired service area information and information of the current location *(server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0062-0063 and 0066; Page 5, Paragraphs 0070-0071 and 0074);* and

an authentication information manager that notifies the authentication information required for authentication of the wireless terminal apparatus to the at least one of the wireless networks specified in the authentication information notification destination searcher before the wireless terminal apparatus moves to the least one of the wireless networks *(server notifies neighboring access points of required information for authentication – Figures 10A-10E – Page 3, Paragraph 0040; Page 7, Paragraphs 0102-0103, 0107-0109).*

However, Lee et al. fails to specifically disclose that the location of the wireless terminal apparatus is acquired. It is understood in the art that the location of the wireless terminal apparatus could be deduced based upon the access point to which it is currently connected.

In related prior art, Eaton et al. specifically discloses the acquisition of the wireless terminal apparatus' location in order to aid in handoff decisions between wide area networks, such as cellular networks, and short range wireless networks, such as wireless LAN *(Column 2, Lines 30-46; Column 8, Lines 19-54; Column 10, Lines 27-42).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Eaton et al. with those of Lee et al. in order

to enable a system to effectively determine the exact location of a wireless terminal to determine appropriate networks to perform a handoff of communication.

Consider **claim 7**, Lee et al. discloses an authentication apparatus comprising:

an authentication information holder that holds authentication information obtained by making a request for authentication information to a centralized management authentication apparatus that performs centralized management of authentication in movement to each of a plurality of wireless networks of a wireless terminal apparatus (*authentication information for neighboring and current access points is exchanged and stored – Figures 10A-10E – Page 3, Paragraph 0040; Page 5, Paragraph 0074; Page 7, Paragraphs 0102-0103, 0107-0109*); and

an authentication performer that uses the authentication information held in the authentication information holder in authentication of the wireless terminal apparatus in a service area of a movement destination when the wireless terminal apparatus moves between service areas of a wireless network to which the authentication apparatus belongs (*Figures 10A-10E – Page 3, Paragraph 0040; Page 7, Paragraphs 0102-0103, 0110-0112*).

However, Lee et al. fails to specifically disclose that the location of the wireless terminal apparatus is acquired. It is understood in the art that the location of the wireless terminal apparatus could be deduced based upon the access point to which it is currently connected.

In related prior art, Eaton et al. specifically discloses the acquisition of the wireless terminal apparatus' location in order to aid in handoff decisions between wide area networks, such as cellular networks, and short range wireless networks, such as wireless LAN (*Column 2, Lines 30-46; Column 8, Lines 19-54; Column 10, Lines 27-42*).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Eaton et al. with those of Lee et al. in order to enable a system to effectively determine the exact location of a wireless terminal to determine appropriate networks to perform a handoff of communication.

Consider **claim 14**, Lee et al. discloses a wireless terminal authentication method in a wireless communication system comprised of a plurality of wireless networks each having at least one radio base station said method comprising (*Abstract; Page 2, Paragraph 0027; Page 3, Paragraph 0040; Page 4, Paragraph 0062*):

an information acquiring step of acquiring location information of a wireless terminal apparatus and service area information of each of the plurality of wireless networks (*server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0063 and 0066*);

an identifying step of identifying at least one of the wireless networks that provides communication services in a peripheral area of a location where the wireless terminal apparatus exists based on the acquired location information of the wireless terminal apparatus and service area information of each of the plurality of wireless networks (*server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0062-0063 and 0066; Page 5, Paragraphs 0070-0071 and 0074*); and

an authentication information notifying step of notifying the identified wireless network of authentication information of the wireless terminal apparatus before the wireless terminal apparatus before the wireless terminal apparatus moves to the network (*server notifies neighboring access points of required information for authentication – Figures 10A-10E – Page 3, Paragraph 0040; Page 7, Paragraphs 0102-0103, 0107-0109*).

However, Lee et al. fails to specifically disclose that the location of the wireless terminal apparatus is acquired. It is understood in the art that the location of the wireless terminal apparatus could be deduced based upon the access point to which it is currently connected.

In related prior art, Eaton et al. specifically discloses the acquisition of the wireless terminal apparatus' location in order to aid in handoff decisions between wide area networks, such as cellular networks, and short range wireless networks, such as wireless LAN (*Column 2, Lines 30-46; Column 8, Lines 19-54; Column 10, Lines 27-42*).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Eaton et al. with those of Lee et al. in order to enable a system to effectively determine the exact location of a wireless terminal to determine appropriate networks to perform a handoff of communication.

Consider **claim 2**, as applied to claim 1 above, Lee et al. as modified by Eaton et al. further discloses that the plurality of wireless networks has a cellular wireless network provided with a function of managing the location of the wireless terminal apparatus, and the authentication information notification destination searcher acquires the information of the current location of the wireless terminal apparatus from the cellular wireless network (*Eaton et al. – WAN network, e.g. cellular, and WLAN network, and the location of the wireless terminal is acquired and stored – Column 2, Lines 30-46; Column 8, Lines 19-54; Column 10, Lines 27-52*).

Consider **claim 3**, as applied to claim 1 above, Lee et al. as modified by Eaton et al. further discloses that the authentication information manager notifies one of the wireless networks that requests the authentication information of the authentication information generated

by an authentication information generating apparatus of the cellular wireless network (*Lee et al. – server notifies neighboring access points of required information for authentication – Figures 10A-10E – Page 3, Paragraph 0040; Page 7, Paragraphs 0102-0103, 0107-0109*).

Consider **claim 4**, as applied to claim 2 above, Lee et al. as modified by Eaton et al. further discloses that the authentication information notification destination searcher acquires the service area information of each wireless network of the plurality of wireless networks from the cellular wireless network (*server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0062-0063 and 0066; Page 5, Paragraphs 0070-0071 and 0074*).

Consider **claim 5**, as applied to claim 2 above, Lee et al. as modified by Eaton et al. further discloses that a location management apparatus of the cellular wireless network manages the service area information and the information of the current location of the wireless terminal apparatus, and based on the service area information and wireless terminal location information managed by the location management apparatus of the cellular wireless network, the authentication information notification destination searcher specifies at least one wireless network of the plurality of wireless networks that provides communication services in a peripheral area of the current location of the wireless terminal apparatus (*server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0062-0063 and 0066; Page 5, Paragraphs 0070-0071 and 0074; Page 7, Paragraph 0104*).

Consider **claim 6**, as applied to claim 1 above, Lee et al. as modified by Eaton et al. further discloses a cellular wireless network comprising the centralized management authentication apparatus (*Eaton et al. discloses a co-located system which deals with authentication between the different networks using location attributes – Column 2, Lines 30-46;*

*Column 8, Lines 19-54; Column 10, Lines 27-42; Lee et al. discloses an effective manner of managing fast roaming authorization between different access points – Abstract; Page 2, Paragraph 0027; Page 3, Paragraph 0040; Page 4, Paragraph 0062).*

Consider **claim 10**, as applied to claim 6 above, Lee et al. as modified by Eaton et al. further discloses an authentication apparatus comprising:

an authentication information holder that holds authentication information obtained by making a request for authentication information to a centralized management authentication apparatus that performs centralized management of authentication in movement to each of a plurality of wireless networks of a wireless terminal apparatus (*Lee et al. – authentication information for neighboring and current access points is exchanged and stored – Figures 10A-10E – Page 3, Paragraph 0040; Page 5, Paragraph 0074; Page 7, Paragraphs 0102-0103, 0107-0109*); and

an authentication performer that uses the authentication information held in the authentication information holder in authentication information holder in authentication of the wireless terminal apparatus in a service area of a movement destination when the wireless terminal apparatus moves between service areas of a wireless network to which the authentication apparatus belongs (*Lee et al. – Figures 10A-10E – Page 3, Paragraph 0040; Page 7, Paragraphs 0102-0103, 0110-0112*);

the wireless terminal apparatus comprising:

a receiver that receives a signal transmitted from a GPS (Global Positioning System) satellite (*Eaton et al. – Column 8, Lines 44-54*);

a current location measure that measures a current location using the signal received from the GPS satellite (*Eaton et al – Column 9, Lines 47-67*); and

a current location information notifier that notifies a cellular wireless network of the current location measured in the current location measurer (*Eaton et al – Column 9, Lines 47-67*); and

a radio base station constituting a wireless network, comprising:

a receiver that receives a signal transmitted from a GPS (Global Positioning System) satellite (*Eaton et al – Column 10, Lines 27-42*);

a current location measure that measures a current location using the signal received from the GPS satellite (*Eaton et al – Column 10, Lines 27-42*); and

a current location information notifier that notifies a cellular wireless network of the current location measured in the current location measurer(*Eaton et al – Column 10, Lines 27-42*).

Consider **claim 11**, as applied to claim 1 above, Lee et al. as modified by Eaton et al. further discloses an authentication provider unit that manages entire wireless networks, comprising the centralized management authentication apparatus (*higher layer server – Figure 10A – Page 7, Paragraph 0103*).

Consider **claim 12**, as applied to claim 11 above, Lee et al. as modified by Eaton et al. further discloses:

a location management apparatus that manages the service area information of each of a plurality of wireless networks, and current location information of a wireless terminal apparatus

Art Unit: 2617

*(Lee et al. – server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0063 and 0066),*

wherein the location management apparatus acquires the location information of the wireless terminal apparatus from a cellular wireless network that performs location management of the wireless terminal apparatus *(Lee et al. determines location based upon current access point connection; Eaton et al. – WAN network, e.g. cellular, and WLAN network, and the location of the wireless terminal is acquired and stored – Column 2, Lines 30-46; Column 8, Lines 19-54; Column 10, Lines 27-52).*

Consider **claim 13**, as applied to claim 7 above, Lee et al. as modified by Eaton et al. further discloses:

a receiver that receives a signal transmitted from a GPS (Global Positioning System) satellite *(Eaton et al. – Column 8, Lines 44-54);*

a current location measure that measures a current location using the signal received from the GPS satellite *(Eaton et al – Column 9, Lines 47-67);* and

a current location information notifier that notifies a cellular wireless network of the current location measured in the current location measurer *(Eaton et al – Column 9, Lines 47-67);* and

a radio base station constituting a wireless network, comprising:

a receiver that receives a signal transmitted from a GPS (Global Positioning System) satellite *(Eaton et al – Column 10, Lines 27-42);*

a current location measure that measures a current location using the signal received from the GPS satellite *(Eaton et al – Column 10, Lines 27-42);* and

a current location information notifier that notifies a cellular wireless network of the current location measured in the current location measurer(*Eaton et al – Column 10, Lines 27-42*).

an authentication provider unit that manages entire wireless networks, comprising a centralized management authentication apparatus that performs centralized management of authentication to enable a wireless terminal apparatus to perform roaming on a plurality of wireless networks each having at least one radio base station, said centralized management authentication apparatus comprising (*higher layer server – Figure 10A –Page 3, Paragraph 0040; Page 5, Paragraph 0074; Page 7, Paragraphs 0102-0103, 0107-0109*):

an information acquirer that acquires service area information of each of the plurality of wireless networks and information of a current location of the wireless terminal apparatus (*server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0063 and 0066*);

an authentication information notification destination searcher that specifies at least one of the wireless networks that provides communication services in a peripheral area of the current location of the wireless terminal apparatus based on the acquired service area information and information of the current location (*server which manages an AP-neighborhood graph – Figure 5A – Page 4, Paragraphs 0062-0063 and 0066; Page 5, Paragraphs 0070-0071 and 0074*); and

an authentication information manager that notifies authentication information required for authentication of the wireless terminal apparatus to the at least one of the

Art Unit: 2617

wireless networks specified in the authentication information notification destination searcher before the wireless terminal apparatus moves to the at least one of the wireless networks (*server notifies neighboring access points of required information for authentication – Figures 10A-10E – Page 3, Paragraph 0040; Page 7, Paragraphs 0102-0103, 0107-0109*).

### *Conclusion*

7. The prior art made of record and not relied upon and is considered pertinent to applicant's disclosure is listed below.

US 7089005 B2	Handover between a cellular system and a wireless local area network	Reddy; Gautam G.
US 20040137901 A1	Vertical handover method by IP multicast	Hamasaki, Ryutaro et al.
US 6975864 B2	Seamless user mobility in a short-range wireless networking environment	Singhal; Sandeep Kishan et al.
US 20040203789 A1	Location service assisted transition between wireless networks	Hammond, Marc John et al.
US 20020035699 A1	Method and system for enabling seamless roaming in a wireless network	Crosbie, David B.
US 20040090937 A1	Method and apparatus for performing inter-technology handoff from WLAN to cellular network	Chaskar, Hemant et al.

Art Unit: 2617

8. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses should be brought to**

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Simon A. Goetze whose telephone number is (571) 270-1113. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm and Friday from 7:30am to 4:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Art Unit: 2617

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.



Simon A. Goetze  
S.A.G./sag

January 8, 2007



NICK CORSARO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600